USSR

CONOR, A. L., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, January-February 1971, pp 97-102

function of the angle θ characterizing the position of the mean shock in the plane of the bottom cut. By plotting calculated values of the angle θ calculated on the assumption that the shocks are plane and intersect regularly on the same graph it is clear that in the majority of experiments there was interaction of the shocks of the Mach type. The total drag of a star-shaped body at hypersonic velocities was determined by the Newton scheme.

2/2

USSR   UDC 615.83:061.22.055.1(476) "1970"

SPERANSKIY, A. P., and SHEINA, A. N.

"Conference on the Therapeutic and Diagnostic Use of Ultrasound"

Moscow, Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'-
tury, No 3, May/Jun 71, pp 281-282

Abstract: At the November 1970 conference it was noted that a new use for
ultrasound in surgery for osteosynthesis and reduction of bone defects, and
for cutting soft tissue has emerged. In the report "Ultrasound and Problems
of Inflammation, Dystrophy, and Regeneration," A. P. Speranskiy summarized
how ultrasound stimulated the organism's life activities; which conditions
were most benefited; and where ultrasound was contraindicated. N. I. Antropova
discussed the beneficial effect of ultrasound on facial nerve neuritis,
using ultraphonophoresis of hydrocortisone initially. E. N. Popova reported
on ultrasound therapy of trigeminal nerve neuritis. L. V. Zobina used
hydrocortisone ultraphonophoresis on certain eye conditions. Z. S. Kuleshova
reported on ultrasound used for vascular conditions in older patients; it
has a regulatory effect on blood coagulatory and anti-coagulatory systems,
and stimulates heparin production. A. N. Sheyina spoke of ultrasound effect
1/3

USSR

SPERANSKIY, A. P., and SHEINA, A. N., Voprosy Kurortologii, Fizioterapii,
i Lechebnoy Fizicheskoy Kul'tury, No 3, May/Jun 71, pp 281-282

on rheumatoid arthritis; it is associated with increased tissue oxidation
processes. I. N. Alferova et al spoke of its positive effect on stages I
and II of silicosis. L. I. Maksimova reported on ultrasound used as anti-
bacterial therapy in destructive forms of pulmonary tuberculosis, described
treatment procedures, and advised earlier ultrasound treatment. L. P. Danilova
and L. I. Alenitskaya used ultrasound in treating genital pruritis, chronic
and subacute inflammations of uterus and adnexi uteri, and lactation mastites.
A. P. Speranskiy, E. S. Svyatenko, and V. A. Matyushkin reported on the effect
of ultrasound on membrane structure of myelinized spinal cord axons; their
evidence casts doubt on the general opinion concerning the mild effect of
pulsed ultrasound. A. V. Polyakov's report outlined the method of ultra-
sound bone "welding" for osteosynthesis and defect compensation; any slides
were used to illustrate the discussion. Ultrasound in diagnosis was a
particularly interesting subject for conference participants. T. P. Makarenko,
Yu. N. Bogin, and A. V. Bogdanov described ultrasound location of organs and
demonstrated ultrasound apparati. YU. N. Bogin discussed the significance of
the new "thermal vision" method in the evaluation of pathological process,
2/3

USSR

SPERANSKIY, A. P., and SHEINA, A. N., Voprosy Kurortologii, Fizioterapii, i Lechebnoy Fizicheskoy Kul'tury, No 3, May/Jun 71, pp 281-282

and noted advances in ultrasound biolocation of chest cavity organs. A. V." Uprev and Yu. N. Bogin reported on the echoplenograph plus ultrasound in determining spleen topography, size, pathological change. A. G. Gol'dman applied the ultrasound biolocation method in determining the morphological condition of liver tissue in tuberculosis patients. G. I. Shul'tsev, Yu. N. Bogin, N. N. Arkhipov reported on ultrasound biolocation in kidney disease, demonstrating its higher diagnostic accuracy. T. A. Finikova used this method in throid disease diagnosis while at the same time employing radioisotope scanning; she reports ultrasound helps determine nodular forms of goiter, and can determine the localization, sizes and even the quantity of nodules. The conference attracted a multi-discipline audience, and resulted in plans for a problem commission on clinical applications of ultrasound.
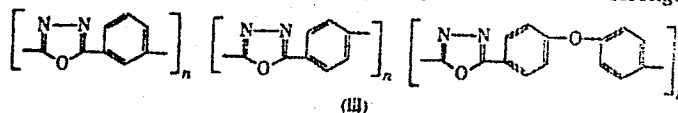
3/3

Acc. Nr: AP0052538   Abstracting Service: Ref. Code:
CHEMICAL ABST. 5-70

101159a Kinetic dependences of polycyclization in polyphosphoric acid. Synthesis of high-molecular-weight poly - 1,3,4-oxadiazoles. Krongauz, E. S.; Korshak, V. V.; Virnsha, Z. O.; Travnikova, A. P.; Sheina, V. E.; Lokshin, B. V. (Inst. Elementoorg. Soedin., Moscow, USSR). Vysokomol. Soedin., Ser. A 1970, 12(1), 135-9 (Russ). The polycondensation-polycyclization of HO_2CRCO_2H (R is $4,4'\text{-}C_6H_4OC_6H_4$, $1,3\text{-}C_6H_4$, or $1,4\text{-}C_6H_4$) with $H_2NNH_2 \cdot H_2SO_4$ or $H_2NNH_2 \cdot H_3PO_4$ (I) in polyphosphoric acid (II) gave III. In the presence of acids stronger

(III)

than II the mol. wt. of III was reduced. The reaction of HO_2CRCO_2H with H_2NNH_2 in the absence of strong acids was slow. High temps. accelerated the reaction, but also reduced the mol. wt. of III. The highest yields and mol. wts. were obtained when instead of H_2OCRCO_2H their K or Na salts were used. The optimum I-dicarboxylic acid salt ratio was 1:1.2; the optimum temps. were 160°, 180°, or 200° for $4\text{-}NaO_2CC_6H_4OC_6H_4CO_2Na \cdot 4$, $4\text{-}NaO_2CC_6H_4CO_2Na$, or $3\text{-}NaO_2CC_6H_4CO_2Na$, resp.   CPJR

REEL/FRAME
19821181

Acc. Nr:
AP0049662   Abstracting Service: Ref. Code:
                CHEMICAL ABST. *5170*   *4R0039*

96041z Polarographic study of aliphatic diisocyanates. Shapoval, G. S.; Lipatova, T. E.; Zhabenko, V. A.; Sheinina, L. S.; Morozov, M. A.; Lagutin, M. A. (Inst. Khim. Vysoko-mol. Soedin., Kiev, USSR). Zh. Obshch. Khim. 1970, 40(1), 25-8 (Russ). Polarographic data were reported for (CH₂)ₙ-(NCO)₂ with $n = 4, 6, 7, 8, 9, 10$. The half-wave potential showed a relation to the above structure by gradual extinction of the mutual inductive effect of the NCO groups as the value of n increased. These potential values were indicative of the overall reactivity of the diisocyanates in such reactions as polyurethane formation and hence represent useful industrial value. The following half-wave potentials were reported (n, V given): 4, 1.93; 5, 2.12; 6, 2.18; 7, 2.23; 8, 2.235; 9, 2.24; and 10, 2.25. The measurements were made relative to the Hg anode by using AcNMe₂ solvent and Et₄NI electrode at 25°. G. M. Kosolapoff
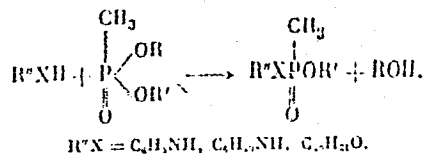
I 3

REEL/FRAME
19801561

1

USSR

ZAVLIN, P. M., SHEK, V. M., Leningrad Institute of Motion Picture Engineers

"The Reaction of Asymmetric Diesters of Methylphosphonic Acid With Nucleophilic Reagents"

Abstract: Asymmetric alkylated and diaryl esters of methylphosphonic acid reacted with the nucleophilic reagents aniline, hexylamine and decyl alcohol. In the case of asymmetric aryl esters, substitution reactions involving the tetrahedral phosphorus atom were observed in all cases

$$R''XH + P\underset{\underset{O}{\|}}{\overset{\overset{CH_3}{|}}{\diagup}}\overset{OR}{\diagdown_{OR'}} \longrightarrow R''X\underset{\underset{O}{\|}}{\overset{\overset{CH_3}{|}}{P}}OR' + ROH.$$
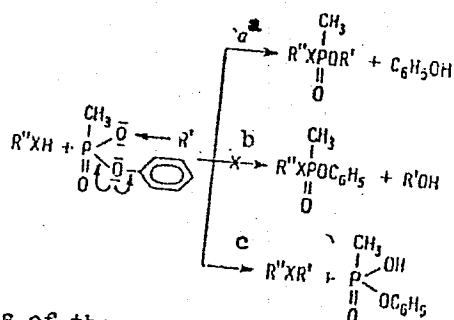
$$R''X = C_6H_5NH, C_6H_{13}NH, C_{10}H_{21}O.$$

In the case of mixed alkyl aryl esters, reactions involving substitution at the tetrahedral phosphorus atom are possible (a and b) as well as substitution reactions involving the tetrahedral carbon atom (c):

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USSR

ZAVLIN, P. M., SHEK, V. M., Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1257-1260

Chromatographic analysis of the reaction products showed that the first reaction is favored, with some participation of the third reaction. Thus the aroxy group participates to a lesser extent than alkoxy in $p_\pi - d_\pi$ conjugation with vacant d-orbitals of the phosphorus atom. The introduction of donor substituents in the phenyl ring of the phenoxy group increases the degree of participation of the unshared pair of oxygen electrons of these groups in $p_\pi - d_\pi$ conjugation with the tetrahedral phosphorus atom, while the introduction of acceptor substituents reduces this participation.

2/2

USSR

BUDKEVICH, G. B., MOMOT, V. YA., SIRENKO, I. I., TARASENKO, YU. A., and SHEKA, I. A.

UDC 628.543:663.631.8

"Removal of Mercury From Polluted Water by Silicon Oxyhydride"

Kiev, Khimicheskaya Tekhnologiya, No 6, Nov/Dec 73, pp 50-52

Abstract: The compound $(H_2Si_2O_3)_N$ is proposed as an absorbent. The H_g ion in solution is reduced to the metal on the surface of the $(H_2Si_2O_3)_N$ where it is fixed. A table gives the amount of H_g removed under various conditions. The amount of H_g removed is 99+% for every case except the high H_g concentration (4000 mg). In another set of experiments the concentration of H_g was reduced 40 to 85 times at a pumping rate of 4 to 6 l/hr over 1 kg of absorbent.

1/1

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UNCLASSIFIED

TITLE--INDIUM SESQUISULFIDE,NICKEL MONOSULFIDE SYSTEM -U-

PROCESSING DATE--13NOV70

AUTHOR-(03)-DEGTYARENKO, N.M., CHAUS, I.S., SHEKA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1127-30

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--INDIUM SULFIDE, NICKEL SULFIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1121

STEP NO--UR/0078/70/015/004/1127/1130

CIRC ACCESSION NO--AP0123113

UNCLASSIFIED

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CIRC ACCESSION NO--AP0123113   UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   PROCESSING DATE--13NOV70

AT 50-100 MOLE PERCENT IS SUB2 S SUB3, THE IN SUB2 S SUB3-NIS SYSTEM FORMS SOLID SOLNS. AT NIS:IN SUB2 S SUB3 RATIOS OF 1 AND 3, THE BINARY SULFIDE NIIN SUB2 S SUB4, M. 1040PERCENT, AND 3 NIS. IN SUB2 S SUB3, M. 1070DEGREES, ARE FORMED.

UNCLASSIFIED

1/2   019

TITLE--ELECTROCHEMICAL STUDY OF INDIUM IONIZATION ON A ROTATING DISK
ELECTRODE -U-

UNCLASSIFIED

PROCESSING DATE--02OCT70

AUTHOR-(03)-KOZIN, L.F., KOBRAND, YE.YE., SHEKA, I.A.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(1) 22-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, ELECTROLYTIC OXIDATION, SULFURIC ACID, PERCHLORIC
ACID, ANODE POLARIZATION, INDIUM, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1335

CIRC ACCESSION NO--AP0107808

STEP NO--UR/0073/70/036/001/0022/0029

UNCLASSIFIED

CIRC ACCESSION NO--AP0107808   UNCLASSIFIED   PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANODIC DISSOLN. OF IN IN HCLO $SUB4$ AND H $SUB2$ SO $SUB4$ SOLNS. WAS STUDIED AT A ROTATING DISK ELECTRODE BY MEANS OF CURRENT EFFICIENCY AND POLARIZATION CURVES. INDIUM FORMS IN PRIME POSITIVE WITH AN ACTIVATION ENERGY OF 4 KCAL-MOLE AS THE PRIMARY ACT. IN PRIME3 POSITIVE RESULTS FROM DISPROPORTIONATION OF IN PRIME POSITIVE. THIS DISPROPORTIONATION TAKES PLACE CLOSER TO THE ELECTRODE IN H $SUB2$ SO $SUB4$ SOLN. THAN IN HCLO $SUB4$. THIS IS ATTRIBUTED TO STERIC FACTORS IN THE DECOMPN. OF IN $SUB2$ SO $SUB4$. AT HIGH H $SUB2$ SO $SUB4$ CONCNS. IN $SUB2$ SO $SUB4$ DECOMP. TO FORM IN $SUB2$ (SO $SUB4$) $SUB3$, S, AND H $SUB2$ S.

UNCLASSIFIED

USSR

BROUDE, V. L., DOLGANOV, V. K., SLOBODSKOY, F. V., SHEKA, Ye. F., Institute of Solid State Physics, Academy of Sciences of the USSR

UDC: 535.373.2

"Exciton-Phonon Interaction and Energy Transfer in a Benzene Crystal and in Isotopically Admixed Deuterobenzene Crystals"

Abstract: The paper presents the results of studies done at $4.2-20°K$ on exciton-phonon and vibron-phonon absorption and luminescence spectra of a benzene-d_0 crystal and an isotopically admixed crystal of d_0-benzene in d_6-benzene. The energy of interaction between electron and vibron exci- tations on the one hand and phonons on the other hand is determined, as well as the probabilities of the corresponding phototransitions. The energy transfer between the dopant molecules is determined in the iso- topically admixed crystal. The authors thank Ye. M. Rodina for doing the computer calculations.

1/1

TITLE--VIBRONIC ABSORPTION IN IMPURITY CRYSTALS OF DEUTERIONAPHTHALENES

UNCLASSIFIED

-U-

AUTHOR-(02)-SHEKA, YE.F., TERENETSKAYA, I.P.

COUNTRY OF INFO--USSR

PROCESSING DATE--16OCT70

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 720-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ABSORPTION SPECTRUM, NAPHTHALENE, ISOTOPE, CRYSTAL, EXCITED STATE, DEUTERIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0450

CIRC ACCESSION NO--AP0107056

STEP NO--UR/0181/70/012/003/0720/0728

UNCLASSIFIED

CIRC ACCESSION NO--AP0107056   UNCLASSIFIED   PROCESSING DATE--16OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VIBRONIC ABSORPTION SPECTRA WERE
INVESTIGATED OF 8 ISOTOPE IMPURITY CRYSTALS OF DEUTERIONAPHTHALENES (H
SUBS IN D SUB8; ALPHA D AUB1 IN D SUB8; H SUB8 IN BETA D SUB4; ALPHA D
SUB4 IN D SUB8, D SUB8 IN H SUB8; D SI88 IN ALPHA D SUB1; AND D SUB8 IN
BETA D SUB1) IN THE REGION OF THE TRANSITION PRIME1 A SUB1G YIELDS
PRIME1 B SUB2U B SUB1G AT 4DEGREES K. A COMPLEX SPECTRAL STRUCTURE WAS
OBSD. WHICH DEPENDS ON THE SIGN OF ISOTOPE SHIFT OF ELECTRONIC TERMS OF
IMPURITY MOLS. RELATIVE TO THE MOLS. OF CRYSTAL SOLVENT. THIS STRUCTURE
IN TERMS OF THE THEORY OF RASHBA IS RELATED TO THE EXCITATION OF
DISSOCD. VIBRONIC STATES.   INTERPRETATION WAS CARRIED OUT OF THE
SPECTRAL BANDS. PARAMETERS WERE DETD. BY THE USE OF WHICH THE TYPES
WERE FOUND OF CONFIGURATION MIXING WHICH DET. THE EXCITATION OF DISSOCD.
STATES.   ANAL. WAS CARRIED OUT OF THE DISTRIBUTION OF INTENSITIES IN
THE VIBRONIC ABSORPTION OF AN IMPURITY CRYSTAL.   FACILITY: INST.
FIZ. TVERD. TELA, CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

SINYAVSKAYA, E. I., SHEKA, Z. A., MEDVED', T. YA., PISAREVA, S. A.,
KABACHIK, M. I., Institute of Physical Chemistry imeni A. V.
Pisarzhevski, Academy of Sciences, UkSSR, Kiev, and Institute of
Heteroorganic Compounds, Academy of Sciences, USSR, Moscow

UDC 541.49+541.65+546.18+546.31

"Reaction of Some Metal Halides with Tetraphenyl- and Tetra-butylalkylenediphosphine Dioxides"

Abstract: The reaction of alkali metal halides and cupric chloride with $(C_6H_5)_2P(O)(CH_2)_nP(O)(C_6H_5)_2$ (n = 1 to 3) and $(C_4H_9)_2P(O)(CH_2)_nP(O)(C_4H_9)_2$ (n = 1 to 6) was studied by measuring the electrical conductivity of the respective salts in nonaqueous solvents. Owing to formation of electrically neutral complexes, the electrical conductivity decreased when the subject compounds were added to LiCl or LiI or to $CuCl_2$. The most effective complexes of the inorganic compounds were the compounds with the methylene bridge with n = 1 or 2. With higher n values the complex

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USSR

SINYAVSKAYA, E. I., et al., Zhurnal Neorganicheskoi Khimii, vol 18, No 9, Sept 1973, pp 2427-2433

formation decreased sharply. This is in agreement with published data on protonation in such dioxides, which show formation of stable cyclic structures for n = 1 or 2.

2/2

USSR

$\mathcal{S}$ UDC 546.732 - 386

YATSIMIRSKIY, K. B., SHEKA, Z. A., and SINYAVSKAYA, E. I.

"Reaction of $CoCl_2$ With Triphenylphosphazobenzene"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 15, No 6, Jun 70, pp 1552-1557

Abstract: A study is reported on the complex formation of $CoCl_2$ with triphenylphosphazobenzene (I), its chemical bonding, and the behavior and properties of these complexes in nonaqueous medium. On the basis of the absorption spectrum determined in the range of 14000-18000 cm-1, $CoCl_2$ and (I) form complexes of tetrahedral structure in tetrahydrofurane solutions. Their formulas are: $CoCl_2[(C_6H_5)_3P:NC_6H_5]_2$, and $CoCl_2(C_6H_5)_3P:NC_6H_5 \cdot THF$, the former being isolated in crystalline form. Comparison of the properties of these complexes with complexes of $CoCl_2$ and triphenylphosphine oxide showed that the phosphazobenzene complexes are more stable than the phosphine oxide complexes; the covalency of the bonds in $CoCl_2$ complexes with triphenylphosphazobenzene and the effect of π-antibonding in this compound are higher than analogous effects in the $CoCl_2$ complexes with phosphine oxides.

1/1

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Inorganic Compounds

USSR

UDC 546.46-38.04+546.41-38.04

SINYAVSKAYA, E. L., and SHEKA, Z. A., Institute of General and Inorganic
Chemistry, Acad. Sc., USSR

"Magnesium and Calcium Halide Complexes With Phosphine Oxides"

Abstract: A study was made of the reaction of magnesium and calcium chlo-
rides and iodides with phosphine oxides in acetonitrile. On the basis of
electroconductivity and ion transfer studies, it was determined that in
acetonitrile the magnesium iodide can form the $[MgL]^{2+}$ and $[MgIL]^+$ complexes
with tetraphenylmethylenediphosphine oxide $[(C_6H_5)_2PO]-CH_2$. Solubility and
electroconductivity studies of calcium chloride in acetonitrile, with the
same complexing agent, showed the presence of $[CaL]^{2+}$ and $[CaClL_2]^+$ complexes.

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1/2   024

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--KINETICS OF THE STRESS STRAIN STATE DURING THE WELDING UP OF A CRACK IN A THIN PLATE -U-

AUTHOR-(03)-MAKHNENKO, V.I., VELIKOIVANENKO, YE.A., SHEKARA, V.M.

COUNTRY OF INFO--USSR

SOURCE--AVTOMAT. SVARKA, FEB. 1970, (2), 36-40

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--METAL CRACKING, WELDING, METAL STRESS, STRAIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0312

STEP NO--UR/0125/70/000/002/0036/0040

CIRC ACCESSION NO--AP0124071

UNCLASSIFIED

CIRC ACCESSION NO--AP0124071   UNCLASSIFIED   PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CHANGES TAKING PLACE IN THE STRESS, STRAIN, AND TEMP. DISTRIBUTIONS AROUND CRACKS IN METAL PLATES DURING WELDING UP OPERATIONS ARE DISCUSSED ON THE BASIS OF THEORETICAL CALCULATIONS AND EXPERIMENTAL TESTS. IN THE REGION IMMEDIATELY SURROUNDING THE WELD COMPRESSIVE STRAINS TEND TO DEVELOP, WHILE IN THE COOLING STAGE TRANSVERSE STRAINS CHANGE LESS RAPIDLY WITH TIME THAN LONGITUDINAL STRAINS. THE PRACTICAL IMPORTANCE OF THESE AND OTHER FACTORS WHEN WELDING UP CRACKS IS INDICATED.

UNCLASSIFIED

Welding

USSR

UDC 621.791.793.011

SHEKERA, V. M., Engineer, MAKHNENKO, V. I., Doctor of Technological Sciences, and LYCHKO, I. I., Candidate of Technical Sciences, Electric Welding Institute imeni YE. O. Paton of the Academy of Sciences UkrSSR

"Stresses in Electroslag Surfacing of Cylindrical Objects"

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 32-35

Abstract: The stresses arising in a steel cylinder during electroslag surfacing of the outer surface and when filling the inner hollow with Cu were investigated by an experimental-computation method based on a mathematical model of the process consisting of models of the temperature field and the deformation processes. The parameters of the model are regulated using the experimental data of temperature cycles in some characteristic points and of the residual elastic deformations on the inner or outer cylinder surfaces. The model of deformation processes is formulated as a problem of nonisothermal plastic flow for an ideal elasto-plastic medium satisfying Mises yield condition. The distribution of residual stresses in cylinder sections is discussed by reference to diagrams. In the surfaced metal the residual stresses can considerably exceed the yield limit of the material, and they depend to a great extent on the specific heat input. In case the physical properties of the sur-

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USSR

SHEKERA, V. M., et al., Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 32-35

faced metal are close to properties of the base metal, the magnitude of the specific heat input can noticeably affect the residual stresses in electro-slag surfacing of the outer cylinder surface. Five figures, one table, 11 formulas, three bibliographic references.

2/2

USSR

MAKHNENKO, V. I., Doctor of Technical Sciences, PIVTORAK, N. I.,
Engineer, and SHEKERA, V. M., Engineer, Electric Welding Institute
imeni Ye. O. Paton of the Academy of Sciences UkrSSR

UDC 621.791.011

"Calculation of Bending-Torsional Deformation in Welding Rods of
Thin-Walled Open Sections"

Abstract: An algorithm, suggested for the rated estimate of ben-
ding-torsional deformations in welding longitudinal seams of
thin-walled linear rods of open section, is based on ordinary hy-
potheses of the technical theory of thin-walled rods generalized
for the case of elasto-plastic strain under non-isothermic con-
ditions. Application is made of the method of sequential tracing
of elasto-plastic deformations on various lengthwise sections of
the rod in the heating process of welding and in temperature leve-
ling. Main correlations determining the mathematical model are ana-
lyzed. Numerical results of calculations of a strip-angle type open
profile are discussed by reference to diagrams. Unlike bending, tor-
sional deformations of thin-walled open section rods depend not only
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USSR

MAKHNENKO, V. I., et al., Avtomaticheskaya Svarka, No 7(244), Jul 73, pp 24-29

on the location of the elasto-plastic deformation center, but also
on the direction of the tangential stress vector in each section.
The torsional deformations are essentially affected by the linear
energy and the direction and order of seam welding. By the discus-
sed calculation methods, the degree of torsional strain can be ra-
ted. Seven figures, eleven formulas, six bibliographic references.

2/2

TITLE--DESENSITIZATION TO THE ACETYLCHOLINE IN VARIOUS FROG MUSCLES -U-

AUTHOR-(02)-MAGAZANIK, L.G., SHEKHIREV, N.N.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
NR 4, PP 582-588
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACETYLCHOLINE, FROG, MUSCLE PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1959   STEP NO--UR/0239/70/056/004/0582/0588

CIRC ACCESSION NO--AP0103678
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0103678
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF IONTOFHORETIC
ACETYLCHOLINE (ACH) MICRO APPLICATION TO SENSITIVE SPOTS OF THE M.
SARTORIUS AND M. RECTUS ABD. FIBERS WAS USED TO SHOW THAT THE ONSET RATE
OF DESENSITIZATION IN THESE TWO MUSCLES' FIBERS IS ESSENTIALLY
DIFFERENT. A RELATIVELY FAST DESENSITIZATION IS CHARACTERISTIC FOR THE
M. SARTORIUS FIBERS. THE AMPLITUDE OF TEST RESPONSES DECREASED BY 60 TO
70PERCENT 20 SEC. AFTER THE STANDARD CONDITIONING DEPOLARIZATION INDUCED
BY THE ACH INFLOW THROUGH THE SECOND CHANNEL OF MICROPIPETTE. THE SAME
PROCEDURE FOR THE M. RECTUS ABD. FIBERS CAUSED ONLY A 30 TO 40PERCENT
DECREASE IN THE AMPLITUDE OF THE TEST RESPONSE. FIBERS OF TWO TYPES
WERE REVEALED IN THE M. RECTUS ABD.: 1) FIBERS SIMILAR TO THOSE FROM THE
M. SARTORIUS BY THEIR REACTION TO ACH; 2) FIBERS WITH THE LOW RATE OF
DESENSITIZATION. THE LATTER TYPE IS CHARACTERIZED BY A GREATER ACH
SENSITIVE ZONE LENGTH AND A STEEPER RELATION CURVE FOR THE CURRENT
THROUGH ACH MICROPIPETTE AND THE AMPLITUDE OF INDUCED DEPOLARIZATION.
THE RATE OF DESENSITIZATION BECAME FASTER WITH INCREASED (CA PRIME2
POSITIVE) SUBO. THE ROLE OF DESENSITIZATION RATE IN THE DURATION OF
MAINTENANCE OF A FIBER ACH CONTRACTION IS DISCUSSED.

UNCLASSIFIED

USSR

UDC: 535.373.2

GROSS, Ye. F. (Deceased), STAROSTIN, N. V., SHEPILOV, M. P., and
SHEKHMAMET'YEV, R. I.

"Spectroscopic Investigation of Energy Levels of Bielectrons or
Biholes in a Bismuth Iodide Crystal"

Moscow, Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 4,
1973, pp 885-890

Abstract: This article is the continuation of work begun in an
earlier paper (Gross, Ye. F, et al, Pis'ma ZhETF, 13, 1971, p 320)
describing experimental research into exciton states in BiI$_3$ crys-
tals in which a hydrogen-like series of resonance lines of radia-
tion and absorption originating in the shortwave rather than the
longwave spectral region was discovered. The results of further
experimental work along this line are discussed in the present
paper. The authors assert that the basic results of the experi-
mentation can be interpreted if it is assumed that this series of
lines is connected with a special type of optical transition in
semiconductors, a transition between two electron zones, or two
hole zones; it can be considered as a direct interzone transition
1/2

USSR

UDC: 535.373.2

accompanying the formation of a bielectron or bihole by analogy with the formation of an exciton for the case of ordinary zone-zone transitions between an upper valent zone and the conductivity zone. Absorption and luminescence spectra of the inverse series in BiI_3 crystals are shown. It is noted that, with better crystals and the use of a high-dispersion spectrometer, the terms of the inverse absorption series at temperatures of $1.6-4.2^\circ$ K have doublet structures and a prediction made on the basis of the theory has been experimentally verified.

2/2

USSR

GROSS, the late Ye. F., FEDOROV, D. L., and SHEKHMAMET'YEV, R. I., Leningrad
State University imeni A. A. Zhdanov, Physicotechnical Institute imeni A. F.
Ioffe of the Academy of Sciences USSR, Leningrad

"Effect of Uniaxial Deformation on Absorption Spectrum of Bismuth Iodide
Crystals"

Abstract: In previous articles the authors reported observing a hydrogen-like
series of lines in the absorption spectrum of bismuth iodide crystals at $4.2°K$
which converge towards the long-wave side instead of the short-wave side,
as usually the case. The frequencies ν_n of these lines obey the inverse
serial relation of the hydrogen-like atom

$$\nu_n = \nu_\infty + \frac{R_1}{n^2},$$

1/2

USSR   UDC: None

GROSS, Ye. F. (Deceased), STAROSTIN, N. V., SHEPILOV, M. E., and
SHEKHMAMET'YEV, R. I.

"Fine Structure of the Energy Levels of a Bielectron or Bihole
in a BiI₃ Crystal"

Leningrad, Fizika Tverdogo Tela, vol 14, No 7, 1972, pp 1942-1947

Abstract: From the experimental discovery of an inverted series of
hydrogen-like lines in BiI₃ crystals, it has been concluded that
the phenomenon was caused by the formation of a bielectron a sys-
tem of twin charged particles, electrons, or holes, with antiparal-
lel spins. Further experimentation was conducted by the men named
above, and the results of that experimentation are given in this
paper. Included also are theoretical investigations into the
spectroscopic characteristics of the two types of twin particles
in poorly-symmetrical BiI₃ crystals. Experimentally, it was found
that in a DFS-13 spectroscope with a dispersion of about 2A/mm the BiI₃ spectrum
had a fine structure and some of its lines were doublets, the distance between
the doublet components varying inversely as the quantum number. The experiments
1/2

USSR

of the present paper also used more perfect crystals. In the theoretical part of the paper, the authors obtain an expression for the energies of the doublet components which indicates that the doublet splitting of the d-bielectron or bihole decreases with increasing line number according to the relation $1/n^2$. This agrees with the experimentally observed variation. The authors, members of the A. A. Zhdanov State University of Leningrad and the A. F. Ioffe Physico-Technical Institute of Leningrad, express their gratitude to N. Drugova, who participated in the experiments.

2/2

USSR

GROSS, Ye. F., PEREL', V. I., and SHEKHMAMET'YEV, R. I., Physicotechnical
Institute imeni A. F. Ioffe, Academy of Sciences USSR; Leningrad State
University imeni A. A. Zhdanov

"A Reverse Hydrogenlike Series in the Optical Excitation of Light Charged
Particles in Bismuth Iodide (BiI$_3$) Crystal"

Abstract: While making an experimental study of exciton states in BiI$_3$
crystal, the authors discovered a hydrogenlike spectrum -- a hydrogenlike
series of resonance absorption and emission lines which converge in the
long-wave region of the spectrum instead of the short-wave region, as
usually happens. The article gives a brief description of the phenomenon
and attempts to explain it by the light excitation of light charged parti-
cles with negative effective masses. The authors thank undergraduate
student Ye. I. BALASHOV and postgraduate student I. I. MEL'NICHENKO for
their assistance in the experiments.

1/1

Photoelectric Effect

USSR

LEVITIN, Ye. I., SEREBRYANIK, Ye. B., ZAYDEL', I. N., SHEKHMEYSTER, Ye. I., KUZIN, N. I., OSOKIN, G. V., BARANOVA, G. M.

"Method of Production of Photoelectron Devices"

Translation: A method is patented for production of a photoelectron device with a multialkaline photocathode. Maximum sensitivity is assured by in- clusion of multiple heatings in the process of producing the photoelectron device. Sensitizing of the photocathode by oxygen is performed after each heating. The operations are repeated until a steady value of the sensitiv- ity of the photocathode is obtained. T. F.

1/1

UNCLASSIFIED   PROCESSING DATE--20NOV70

1/2   016   RECOVERY OF ENERGY DURING CATALYSIS ON ADSORPTION CATALYSTS. II.
TITLE--RECOVERY OF ENERGY DURING CATALYSIS ON ADSORPTION CATALYSTS. II.
   SPECIFIC ACTIVITY -U-
AUTHOR-(04)-FOMINA, A.P., SHEKHOBALOVA, V.I., POSPELOVA, T.A., KOBOZEV,
   N.I.
COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 366-9

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PLATINUM, CATALYSIS, CATALYTIC DECOMPOSITION, HYDROGEN
   PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED   STEP NO--UR/0076/70/044/002/0366/0369
PROXY REEL/FRAME--3002/1187

CIRC ACCESSION NO--AP0123605
                         UNCLASSIFIED

2/2   016
CIRC ACCESSION NO--AP0123605
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   CURVES OF SP. ACTIVITY FOR 2
SERIES OF ADSORPTIONAL PT CATALYSTS FOR THE DECOMPN. OF H SUB2 O SUB2
WERE ANALYZED.   THE CATALYSTS WERE PT-SIO SUB2 WITH SURFACE AREA 180 OR
375 M PRIME2-G.   THE CURVES SHOWED AN INCREASE OF SP. ACTIVITY AT HIGHER
CONCNS. OF PEROXIDE.   RESULTS INDICATED THE PRESENCE OF 2 TYPES OF
ACTIVE CENTERS DURING THE REACTION: (PT SUB1) TYPICAL FOR CATALYTIC
PROCESS, AND (PT SUB2) MORE COMPLEX AND WHICH PLAYS A BASIC ROLE IN THE
EFFECT OF THE RECOVERY (OR RECUPERATION) OF ENERGY IN THE H SUB2 O SUB2
CATALYSIS.   THE PARABOLIC SHAPE OF THE ACTIVITY CURVES, I.E., INCREASE
HIGHER ISOTHERMIC ENERGY EVOLUTION ACTIVATION AS A RESULT OF HIGHER H
SUB2 O SUB2 CONCNS., EVIDENCED A HIGH ENERGETIC ACTIVATION OF PT CENTERS
ON THE CARRIER AS THE PT CENTERS DREW CLOSER.   THUS, THE ENERGY
LIBERATED IN EXOTHERMIC REACTION IS, APPARENTLY, PARTIALLY RECOVERED AND
UTILIZED TO INCREASE THE YIELD PRODUCED BY ACTIVE CENTERS.   THE RESULTS,
THEREFORE, APPEAR CONSISTENT WITH THE THEORY OF ENERGY RECUPERATION
INCATALYSIS, DEVELOPED BY V. V. MAZHUGA (1967).   FACILITY: MOSK.
GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

USSR
S
UDC: 621.3.049.75:774

PASTUKHOV, V. M., LOBOV, V. I., LUTCHENKOV, A. M., CHUMAKOV, Ye. A., SIYANOV, S.A., SHEKHODANOV, M. P., LESKOVSKAYA, N. P., Scientific Research Institute of Technology and Production Organization"

"A Device for Combining Solid Circuits or Semiconductor Devices with Phototemplates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, pp 51-52, patent No 259975, filed 19 Nov 66

Abstract: This Author's Certificate introduces a device for combining solid circuits or semiconductor devices with phototemplates and exposing the resultant combination. The device contains a table for combining the solid-state circuit with the phototemplate, an illuminator, power supply, control unit and enclosure. As a distinguishing feature of the patent, precision of registration is improved by fitting the combining table with a hemispherical suction device fastened on a rotating column and connected through a piston rod, movable sleeve, cylinder, support bracket and moving carriage in prismatic guides to a fixed plate to which the phototemplate is fastened.

1/1

SHEKHOVTSOV, V.I.

NONUNIFORMITY OF THE VELOCITY AND PRESSURE FIELDS IN A MAGNETOHYDRODYNAMIC PUMP

[Abstract of a Paper by R. K. Gorn, V. R. Polishchuk, V. I. Shekhovtsov, V. S. Yakovlev Given at a Magnetohydrodynamic Conference, pp 116-117]

In the paper devoted to the investigation of magnetodynamic pumps [1], the complexity of the flow structure of a liquid-metal in the core has been noted, and a proposition has been stated regarding the nature of the flow in the core and turbulence there. In order to discover the nature of the flow in the core and the channels adjacent to it, experimental studies were made on models with liquid gallium and a transparent electrolyte (30% H_2SO_4), and a numerical calculation was made of the velocity and pressure fields based on the Navier-Stokes equation with the given distribution of the electromagnetic forces. The velocities used in the study in the gallium loop is described in [2]. The procedure the electrolyte were measured optically by photographing the visualized flow. A numerical study was made of the equations of laminar flow of a viscous liquid [3].

Introducing the current function ψ and the eddy function Ω, we obtain the system of differential equations

$$\frac{\partial \Omega}{\partial \tau} + \Omega \frac{\partial \psi}{\partial y} - \frac{\partial \psi}{\partial x} \frac{\partial \Omega}{\partial y} = \frac{1}{H} \nabla^2 \Omega - \frac{1}{H} \frac{\partial E}{\partial y} \tag{1}$$

$$\Delta \psi = -\Omega \; ; \quad \Omega = \frac{\partial^2 \psi}{\partial y^2} \; ; \tag{2}$$

where

$H = U_0 a/\nu$, a is the halfwidth of the transport channel; U_0 is the maximum velocity at the input to the core; F_0 is the scale of the electromagnetic force; $\partial E/\partial y$ is the variation of the electromagnetic force in the lateral channel;

The numerical calculations were performed for the core with different ratios of the dimensions l/a and H, Re. In Figure 1, *, the calculated pictures of the movement of the liquid in a crisscross core ($Re = 600$, $H = 3 \cdot 10^5$) and the

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USSR   UDC: 532.5:621.313.3:538.4

GORN, R. K., POLISHCHUK, V. P., SHEKHOVTSOV, V. I., and YAKOVLEV,
V. S.

"Investigating Velocity and Pressure Fields in a Magnitodynamic
Pump"

Abstract: This article describes experiments to investigate magne-
tohydrodynamic processes in the channel of a magnetodynamic pump.
The experiments were done with liquid gallium and a transparent
electrolyte consisting of 30% H_2SO_4. From the distribution of
electromagnetic forces thus obtained, the numerical computations
of the velocity fields and the pressures were made using the
Nav'ye-Stokes equations. The method of the investigations is
described in earlier papers by the same authors named above (Ma-
terialy k V Tallinskomu soveshchaniyu po elektromagnitnym raskhodo-
meram -- Materials for the Fifth Tallin Conference on Electromag-
netic Flowmeters -- Tallin, 3, 1971, 46) and a diagram of the cru-
ciform active zone of the pump used in the tests is shown. The
theory of the experimental situation is developed, and theoretical
results are compared with experimental to show that the change in
1/2

USSR

UDC: 532.5:621.313.3:538.4

GORN, R. K., et al, Magnitnaya gidrodnamika, No 1, 1973, pp 105-110

pressure in the active zone and in the side channel of the pump is the same in both.

-END-

CSO: 1861-W

2/2

1/2   024   UNCLASSIFIED   PROCESSING DATE--13NOV7C
TITLE--LOW CYCLE FATIGUE OF TITANIUM ALLOYS IN A CORROSIVE MEDIUM -U-

AUTHOR-(02)-GLIKMAN, L.A., SHEKHOVTSEV, YE.D.

CCUNTRY OF INFO--USSR

SCURCE--FIZ.-KHIM, MEKH. MATER. 1970, 5(6), 744-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TCPIC TAGS--TITANIUM ALLOY, METAL CORROSION, CYCLE FATIGUE LIFE, SODIUM
   CHLORIDE, DISTILLED WATER

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0635   STEP NO--UR/0369/70/005/006/0744/0746

CIRC ACCESSICN NU--AP0105614
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0105614   UNCLASSIFIED   PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. TWO TI ALLOYS, ONE CONTG. AL
4PERCENT AND TI THE REST, AND THE OTHER AL 6.5, SN 3.8, V 2.5, ZR
2.6PERCENT AND TI THE REST, WERE TESTED IN DISTD. WATER AND IN A
3PERCENT NACL SOLN. TWO KINDS OF SPECIMENS WERE TESTED: SMOOTH WITH A
CUTOUT OF 30MM RADIUS IN THE CENTER, AND THE OTHER WITH A SHARP CIRCULAR
NOTCH IN THE CENTER. THE SPECIMENS WERE ROTATED AT A RATE OF 1.6
CYCLES-MIN. THE SMOOTH SAMPLES REMAINED PRACTICALLY UNAFFECTED WHEREAS
THE NOTCHED SPECIMENS SHOWED DEFINITE SIGNS OF CORROSION.

UNCLASSIFIED

USSR

UDC: 51

YEVDOKIMOV, A. G., SHEKHOVTSOV, B. G.

"Linear Problem of Synthesizing a System of Regulating Elements in a Mine Ventilating Network Which is Optimum With Respect to Energy Expenditures"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch--tekhn. sb. (Instruments and Systems of Automation. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 21, pp 138-153 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V593)

Translation: A general algorithm for solving the linear problem is considered which is based on goal-directed sorting of trees of a PERT graph. A compact computational procedure is proposed. Authors' abstract.

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USSR

UDC 577.4

SHEKHOVTSOV, B. G., GUBAREV, S. I.

"Finding the Admissible Solution of the Problem of Mathematical Programming with Linear Restrictions"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Instruments and Automation Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 21, pp 55-59 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V497)

Translation: A study was made of the algorithm for finding the admissible solution of the problem of mathematical programming the region of assignment of which is defined by a system of linear equalities and two-way restriction of the variables.

1/1

USSR   UDC 577.4

YEVDOKIMOV, A. G., SHEKHOVTSOV, B. G., GUBAREV, S. I.

"A Problem of Mathematical Programming for Linear Restrictions"

Translation: A study was made of the necessary and sufficient conditions for
the local minimum points of the problem of mathematical programming with linear
restrictions. Analytical expressions of the criteria for selecting the direc-
tion and magnitude of the admissible stepsize of the differential algorithm
for its solution are presented.

1/1

USSR

UDC: 577.4

SHEKHOVTSOV, B. G. and GUBAREV, S. I.

"Search for a Permissible Solution to a Mathematical Programming
Problem With Linear Limits"

Translation: An algorithm is considered for finding the permis-
sible solution of a problem in mathematical programming whose
specified area is determined by a system of linear equations
and a double-ended limitation of the variables. Authors' abstract

1/1

USSR

YEVDOKIMOV, A. G. and SHEKHOVTSOV, B. G.

"Linear Problem of Synthesizing a Control System of Optimal Power Consumption in a Mineshaft Ventilating Grid"

Translation: A general algorithm is considered for solving a linear problem based on a purposeful selection of trees in the grid graph. A compact calculation procedure is presented. Authors' abstract

1/1

Foundry

USSR

UDC 669.187.25

KOCHO, V. S., IVANCHENKO, Yu. I., KOROBKO, I. M., SHEKHOVTSOV, O. A., MALIKOV, G. P., and ANTIPENKO, G. I., Kiev Polytechnical Institute; Zaporozhye Electro-Metallurgical Works (Dneprospetsstal')

"Determination of the Instant of the End of the Power Melting Period in a Steel-Melting Arc Furnace"

Abstract: The possibility of determining the instant at which the steel melting period ends is discussed. A computation method is presented which is based on solution of a derived function from experimental data on melting ball-bearing steel in an arc furnace of the Dneprospetsstal' plant. A schematic of the computer is included.

1/1

USSR

KELLER, F. E., SHEKHOVTSOV, O. I., KON, Ye. L.

"Testing One Class of Coding and Decoding Device"

Translation: Methods are suggested for testing the operation of coding and decoding devices modeling graphs of code intersections of redundant codes.

1/1

USSR

UDC 621.313.333:538.4

SHEKHOVTSOV, V. I., POLISHCHUK, V. P., GORN, R. K., and YAKOVLEV, V. S.

"Field of a Magnetodynamic Pump Stator"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 72, pp 62-70

Abstract: The problem is presented on determining the electromagnetic field of a stator in the active zone of a magnetodunamic pump, approximated by a thin cross-shaped plate located between the ferromagnetic surfaces and consisting of individual sections with varying equivalent parameters. The general boundary conditions were formulated considering pump design and arrangement of stator windings. The Helmholtz equation was solved for two components of the complex current density in the "cross" with infinitely long rays by the Fourier-Lamb method using superposition of the fields in the central region of the "cross." Simplified solutions were obtained, considering the relationships in actual pumps for the pole and an infinitely wide electromagnet. Uniform relationships, found in the latter, enter into the general solutions for the "cross" and poles, the remaining members of which take into account the longitudinal and lateral fringe effects. A comparison of the experiment   and calculation for a solid brass coil showed the
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USSR

SHEKHOVTSOV, V. I., et al., Magnitnaya Gidrodinamika, No 4, Oct-Dec 72, pp 62-70

acceptability of the field calculation in the pump channel for the experimentally found coefficient of current spread and equations for the pole. 4 figures, 7 bibliographic references.

2/2

USSR

UDC 543.01:546.76:546.681:546.19

DOLMANOVA, I.,F., BOL'SHOVA, T. A., SHEKHOVTSOVA, T. N., and PESHKOVA, V. M., Moscow State University imeni M. V. Lomonosov

"Kinetic Method for Determining Chromium Traces in Gallium Arsenide"

Abstract: Column extraction and ion exchange chromatography are used to separate traces of Cr from the major elements $GaAsO_3$, and a Cu-Co-Ni mixture. The sample is dissolved in nitric acid, oxidizing the arsenic to arsenic acid. The arsenic acid is carried through the column while the Cr(III) is adsorbed. The Cr (III) is subsequently removed from the column with 3 N HCl. Interferring ions of Cu (II), Co(II), and Ni(II)--were removed from the acid solution by extraction with dithizone in CCl_4 for 20-30 min on a mechanical shaker. Concentrations of Cr(III)--as the dithizonate in the aqueous phase-- were determined from the oxidation by H_2O_2 of O-dimethoxybenzidine if the con-centrations were greater than 10^{-3} micrograms/ml and of o-dimethoxybenzidine - γ-picoline for concentrations of 10^{-3} to 10^{-5}. The reaction was followed on a spectrophotometrically at $\lambda_{max} = 350$ nm.

1/1

Burn Studies

USSR

IVANOVA, N. P.; YEVDOKIMOV, Ye. A.; SHEKHTER, A. B.; ISTRANOV,
L. P.; RUDENKO, T. G.; SYCHENIKOV, I. A.; Central Scientific
Research Laboratory imeni S. I. Chechulin, First Moscow Medical
Institute imeni I. M. Sechenov, and Central Institute of Trauma-
tology and Orthopedics.

"Application of Collagen Sponge in the Treatment of Burns"

Moscow, Novoye v Diagnostike, Lechenii, Profilaktike Vazhney-
shikh Zabolevaniy i Metodakh Issledovaniya (News in Diagnosis,
Treatment, and Prophylaxis of the Most Important Diseases and
Methods of Investigation), Ministerstvo Zdravookhraneniya SSSR,
1971, 128 pp, pp 51-52

Abstract: Notwithstanding the large variety of materials and
drugs used for the dressing and treatment of burns, to this
date there is no generally accepted method of treatment.
During the past few years information has appeared concerning
the extensive utilization of collagen polymer preparations for
the treatment of burns, trophic ulcers, scalp wounds, and so on,

1/4

USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilak-
tike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971,
128 pp, pp 51-52

which is absorbed by the organism and has a positive effect on
the regenerative processes of the lesion.

The porous collagen sponges are hemostatically effective, and by
their hygroscopic and structural properties securely protect the
injured surface from the effects of the external environment,
considerably reduce plasma loss, and contribute to the growth
of granulation tissue and the rapid healing of the lesions.
In addition, the collagen can be permeated with different medi-
cinal substances (antibiotics, antiseptics, hormones, vitamins,
substances stimulating the growth of connective tissue, and
others) which are released by lysis of the collagen sponge.

Taking into consideration the positive properties of the collagen
preparation, researchers at the Central Scientific Research
Institute of Traumatology and Orthopedics Burn Section applied
2/4

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USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilak-
tike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971,
128 pp, pp 51-52

a collagen sponge 0.5-0.8 cm thick and filled with boric acid,
hydrocortisone, and furacillin to 20 patients with fresh burns
and large granulation surfaces.

For the treatment of second and third degree burns, sponges cor-
responding in size to the injured areas were placed on the pro-
cessed burned surfaces. Aseptic dressings were then applied.
The dressings were changed within 2-3 days, and subsequently as
required by the condition of the burned surface and the rapidity
of lysis of the sponges. When applied to moist wound surfaces,
the collagen sponges closely adhered to the wound, absorbing
the lesion exudate. When exudation was copious, the sponges
were absorbed by the second or third days.

The positive aspects of the application of collagen sponge are
its rapid and painless covering of the burned surfaces, and the
possibility of permeating the sponge with different medicinal
substances which are able to exert a direct local effect on the

3/4

USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilak-
tike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971,
128 pp, pp 51-52

wound with lysis of the sponge. Collagen sponges can be recom-
mended for use in the general set of therapeutic measures for
the treatment of patients with burns as a temporary dressing
for the preparation of large injured surfaces for subsequent
autoplasty.

4/4

USSR   UDC: 551.511

SHEKHTER, F. N.

"An Approximate Formula of Diffusion Type for a Flux of Long-Wave Radiation"

Tr. Gl. geofiz. observ. (Works of the Main Geophysical Observatory), 1970,
vyp. 257, pp 90-100 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B888)

Translation: A method is outlined for deriving a formula of diffusion
type. The radiation flux is written in a form analogous to the formula
for turbulent heat flux. The expression is used for evaluating the role
of radiant and turbulent heat exchange in formation of thermal stratifi-
cation under steady-state conditions. It is found that if the temperature
coefficient of turbulent heat conductivity k is much less than unity (in
sq. m. per sec.), then radiant heat exchange predominates, whereas turbu-
lent heat exchange predominates if $k \gg 10 \text{m}^2/\text{s}$. Bibliography of 14 titles.
Author's abstract.

TITLE--X RAY DIAGNOSIS OF MIXED FORMS OF CANCER OF THE STOMACH -U-

AUTHOR-(02)-SHEKHTER, I.A., MEDVEDEVA, N.T.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 5, PP 59-63

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOLOGY, CANCER, STOMACH, DIAGNOSTIC METHODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0135   STEP NO--UR/0531/70/000/005/0059/0063

CIRC ACCESSION NO--AP0129391
                         UNCLASSIFIED

CIRC ACCESSICN NO--AP0129391   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER STUDY WERE CLINICO ROENTGENOLOGICAL DATA CONCERNING 165 PATIENTS (OF THIS NUMBER 109 WERE OPERATED UPCN) SUFFERING FROM CANCER OF THE STOMACH OF DIVERSE LOCALIZATION. CANCER OF MIXED EXOPHYTIC ENDOPHYTIC GROWTH WAS ESTABLISHED ROENTGENOLOGICALLY IN 68 PATIENTS. THE AUTHORS DISCUSS THE POSSIBILITIES AND ROENTGENOLOGICAL RECOGNITION OF ELEMENTS OF ENDOPHYTIC GROWTH CF PRIMARY EXOPHYTIC GASTRIC CANCER. THE MOST DEMONSTRABLE AND SIGNIFICANT CANCEROUS INFILTRATION OF THE GASTRIC WALL IS ESTABLISHED WITH THE AID OF PARIETOGRAPHY. FACILITY: KAFEDRA RENTGENOLOGII I RADIOGII MOSKOVSKOGO MEDITSINSKOGO STOMATOLOGICHESKOGU INSTITUTA.

UNCLASSIFIED

USSR

UDC 530.161

AMIROV, R. KH., SMOLYANSKIY, S. A., and SHEKHTER, L. SH.

"Inclusion of the Principle of Causality in the Dynamic Description of Non-equilibrium Systems"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy — Fizika, No 6, 1973, pp 48-51

Abstract: The correction to the Hamiltonian of the system corresponding to the source in the Liouville equation disturbing the invariance of this equation with respect to the time reflection was found by the nonequilibrium statistical operator method. The analysis of this correction permits the conclusion that the forces leading to irreversible behavior of the systems have an essentially nonpotential nature. The inclusion of the causality principle in the Hamiltonian of the system also permits a new representation to be presented for the nonequilbirum statistical operator.

1/1

1/2   021   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--RELATION BETWEEN NONLINEAR POLARIZABILITY TENSOR OF MOLECULES AND
   THE GREEN LAG FUNCTIONS OF THE APPLIED ELECTROMAGNETIC FIELD -U-
AUTHOR-(03)-SOKOV, O.G., SHEKHTER, L.SH., YUDOVICH, M.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(2), 228-31

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TENSOR, TENSOR ANALYSIS, NONLINEAR EFFECT, MAGNETIC
   POLARIZATION, MOLECULE, GREEN FUNCTION, ELECTROMAGNETIC FIELD,
   MATHEMATIC EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1782   STEP NO--UR/0051/70/028/002/0028/0231

CIRC ACCESSION NO--AP0112768
                      UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY IS INVESTIGATED OF APPLYING THE DZYALOSHINSKII AND PITAEVSKII (1959) METHOD FOR CALG. MOL. POLARIZABILITY TENSORS.   EXPRESSIONS ARE DERIVED FOR THE TENSORS OF LINEAR AND NCNFUNCTIONS OF THE APPLIED ELECTROMAGNETIC FIELD.

UNCLASSIFIED

USSR

SHEKHTER, L. Sh., Saratov State University imeni N. G. Chernyshevskiy

"On a Theory of Conductivity of a Semiconductor With Nonstandard Band Placed in an Alternating Magnetic Field"

Abstract: Previous studies of the conductivity of a medium placed in alternating magnetic $H_z = H_0 + H_1 \cos \Omega t$ and electric $E(E_x, E_y, 0) = E_0 \cos \omega t$ fields have shown that the nonstationary nature of the process affects the dependence of tensor σ_{ij} (averaged with respect to time) on the parameter $\Delta = \omega_1/\Omega$, where $\omega_1 = eH_1/mc$ is the cyclotron frequency corresponding to the amplitude of the alternating magnetic field. The author offers a theory of conduction which accounts for a nonstandard conduction band by assuming a two-band approximation with Kane dispersion

$$ \varepsilon = \frac{\varepsilon_c}{2}\left[\left(1 + \frac{2\,\hbar^2 \kappa^2}{m_n \varepsilon_c}\right)^{1/2} - 1\right]. $$

Using this approximation and the expression for relaxation time

1/2

USSR

SHEKHTER, L. Sh., Izvestiya VUZov: Fizika, No 9*124), Sep 72, pp 152-153

$$\tau\,(\varepsilon) = \tau_{0r}\,(T)\left(\frac{\varepsilon}{\kappa_0 T}\right)^{r-\frac{1}{2}}\frac{\left(1+\frac{\varepsilon}{\varepsilon_g}\right)^{r-\frac{1}{2}}}{\left(1+\frac{2\varepsilon}{\varepsilon_g}\right)},$$

the author solves the kinetic equation in complete analogy with the case of
the standard band. The resultant tensor shows the appreciable effect of a
nonstandard conduction band on the variation in absorption properties of the
medium due to parametric variation of the alternating magnetic field.

2/2

- 30 -

USSR

BOKOV, O. G., SHEKHTER, L. Sh.

"Relation between Tensors of Micro- and Macropolarizability of Nonlinear Anisotropic Dispersion Media"

Leningrad, Optika i Spektroskopiya, September 1970, pp 460-2

ABSTRACT: A method of side currents and quantum Green functions of an electromagnetic field is used to find the relation between tensors of linear and nonlinear polarizability of molecules and tensors of the corresponding polarizability of anisotropic media with spatial and time dispersion.

    The article includes 14 equations. There are 6 references.

1/1

USSR

UDC 624.131.551.1+624.15

STAVNITSER, L. R., SHEKHTER, O. YA.

"Forced Horizontal Oscillations of Piles Under Seismic Wave Action"

Moscow, Osnovaniya, fundamenty i mekhanika gruntov, No. 5, 1971, pp 19-23

Abstract: Bending oscillations of a cylindrical pile bearing a mass on the upper
end is investigated for the case when stationary longitudinal waves are propagat-
ing in a horizontal direction. It is assumed that oscillations of piles placed
in the same group occur with the same phase since the distances between them are
small as compared with the seismic wavelengths. To obtain an approximate solu-
tion, the authors therefore investigate the motion of one pile together with the
part of the load imparted to it from the foundation structures. This load is
assumed to be concentrated on the upper end of the pile. An approximate discrete
scheme in the form of a multimass system with elastic bonds is used for a common
solution to the equations for wave action and the transverse vibrations of the
pile. This makes it possible to obtain particular solutions of the plane dynamic
problem of elasticity theory for each horizontal cross section of the pile with
subsequent determination of the matrix of the coefficients from the solution of
the equations of the transverse vibrations of the pile. Amplitudes and phases

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USSR

STAVNITSER, L. R., SHEKHTER, O. YA., Osnovaniya, fundamenty i mekhanika gruntov, No. 5, 1971, pp 19-23

of the vibrations of the pile, the dynamic pressure of the ground, and diagrams of the dynamic bending moments and transverse forces are then determined as functions of the depth, time, diameter and length of the pile, static vertical load, elastic properties of the ground and the parameters of the seismic waves. Analysis of computer calculations showed that the greatest values of the dynamic pressure of the ground on the pile and of transverse forces and bending moments occur on the upper end of a pile rigidly embedded into grillage. These values drop off sharply with depth and become practically insignificant for the lower two-thirds of the length. Analysis also showed that only the first mode of the oscillations of the pile is achieved under wave action and that resonance relationships are characterized by a single maximum in the region of very low frequencies.

2/2

USSR

ANISOVICH, V. V., and SHEKHTER, V. M., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences USSR

"The Possibility of Meson- eson Scattering Phase Determination in Processes With Regge Pole Exchange"

Abstract: The article considers unstable particle scattering in transitions of two particles to three, determined by the exchange of one or more Regge poles in the t-channel. The authors begin with a consideration of the kinematics of three-particle reactions and then consider the process $K + p \rightarrow \bar{K} + \pi + p$ (exchange of vacuum states only) for the case in which there is only the exchange of one Pomeranchuk pole and for the case in which there is also the contribution of cuts. This is followed by consideration of the reaction $\pi + p \rightarrow \pi + \pi + N$ (exchange of

1/2

USSR

nonvacuum Regge poles) with allowance for the contribution from
Regge poles ω , R, and π , where R denotes the trajectory on
which is found the resonance A_2. The article concludes with a
discussion of changes which appear in the study of cuts due to
the exchange of an arbitrary number of vacuum Pomeranchuk trajec-
tories in conjunction with Reggeons ω , R, and π .

2/2

1/2   020   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--PROCESS FOR INTRODUCING DIPHENYLAMINE INTO LITHIUM GREASES -U-

AUTHOR-(05)-SMIOTANKO, E.A., UVAROVA, E.M., FUKS, I.G., VAYNSKTOK, V.V.,
   SHEKHTER, YU.I.
COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5) 23-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ANTIOXIDANT ADDITIVE, GREASE, LUBRICANT ADDITIVE,
   DIPHENYLAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1947   STEP NO--UR/0318/70/000/005/0023/0025

CIRC ACCESSION NO--AP0133791
                     UNCLASSIFIED

CIRC ACCESSION NO--AP0133791
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFICIENCY OF PH SUB2 NH, AND
OXION. INHIBITOR FOR GREASES, WAS NOT AFFECTED BY THE METHOD OF
INTRODUCING THE ADDITIVE.   THE OPTIMUM CONCN. WAS 0.3-0.6 WT. PERCENT
PH SUB2 NH.   FACILITY: MOSK. OPYT.-PROM. ZAVOD, MOSCOW, USSR.

UNCLASSIFIED

1/2   029   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CORROSION INHIBITING LUBRICANTS -U-

AUTHOR--SHEKHTER, YU.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,350
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, FATTY ACID, MINERAL OIL, CALCIUM OXIDE,
ALUMINUM, LUBRICANT ADDITIVE, CORROSION INHIBITOR, ANTICORROSION
ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1800   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0150633
                    UNCLASSIFIED

CIRC ACCESSION NO--AA0130633   UNCLASSIFIED   PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE LUBRICANTS ARE PREPD. BY
  MIXING NITRATED OIL 50-5, PARAFFIN 1.4-3.5, OXIDIZED PETROLATUM 2-4,
  SYNTHETIC C SUB17-20 FATTY ACIDS 1-2.5, CAO 0.3-1, MINERAL OIL 33-45,
  AND AL ALUMS 0.3-1PERCENT BY WT.   FACILITY: MOSCOW EXPERIMENTAL
  INDUSTRY PLANT.

UNCLASSIFIED

1/2   029   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CORROSION PROTECTIVE PROPERTIES OF SILICONE LIQUIDS AND DIOCTYL
   SEBACATE -U-
AUTHOR-(05)-SMIOTANKO, E.A., SHEKHTER, YU.N., NIKONOROV, YE.M., YEROKHIN,
   G.S., SHVETSOVA, V.T.
COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 14-16

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--CORROSION PROTECTION, SILICONE, COPPER ALLOY, LUBRICANT
   PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1674   STEP NO--UR/0318/70/000/002/0014/0016

CIRC ACCESSION NO--AP0118652
                   UNCLASSIFIED

CIRC ACCESSION NO--AP0118652   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELATION WAS OBTAINED BETWEEN
THE RELATIVE ELEC. RESISTANCE (R) AND THE RELATIVE POLARIZATION
RESISTANCE (R SUBP) OF THIN LUBRICANT LAYERS ON METAL SURFACES AND THE
ELECTROCHEM. CORROSION. DIOCTYL SEBACATE (I) OR VARIOUS COM. SILICONE
OILS (POLY(METHYLSILOXANE), POLY(METHYLPHENYLSILOXANE),
POLY(ETHYLSILOXANE), POLY(METHYL,GAMMA,TRIFLUOROPROPYLSILOXANE)) DO NOT
PROTECT CU PLATES AGAINST A RAPID WT. LOSS IN 0.5N NACL SOLN. AND HAVE
LOW R AND R SUBP VALUES (IN 0-30.0PERCENT RANGE). THE ADDN. OF 2PERCENT
CORROSION INHIBITOR, SUCH AS "UREA SUCCINIMIDE", TO I INCREASED ITS R
FROM 5.0 TO 98.8PERCENT, ITS R SUBP FROM 0 TO 66PERCENT, AND
CONSIDERABLY REDUCED THE ELECTROCHEM. CORROSION OF CU PROTECTED WITH IT.

UNCLASSIFIED

USSR

SHEKHTER, Z. Kh., OOKOLOV, G. S., PETROV, B. I., LERNER, B. L., DADERKO,
Yu. R., BARYSHNIKOV, G. P., Special Design Office of Seismic Instrument
Building

UDC: 550.834

"A Device for Registration of Seismic Information in Digital Form"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 23, Aug 72, Author's Certificate No 346694, Division G, filed 20 Aug 71,
published 28 Jul 72, p 188

Translation: This Author's Certificate introduces a device for registra-
tion of seismic information in digital form. The device contains ampli-
fiers in accordance with the number of channels, a multiplexer, an analog
code converter, a single-channel digital plotter, and a single-channel
playback circuit. As a distinguishing feature of the patent, in order to
simplify computer input of recorded seismic information, and to visualize
recorded data by means of a single-channel playback device through se-
quential path-by-path representation of multichannel seismic data in
serial digital code on a single track of the magnetic tape, a code con-
verter and an intermediate memory module are added. The code converter

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USSR

SHEKHTER, Z. Kh. et al., USSR Author's Certificate No 346694

has a single input connected to the output of the analog code converter, and several outputs of demultiplexed signals in serial code to equal the number of seismic channels. In the registration mode, each of the converter outputs is connected through a commutator to its own section of the intermediate memory. In the mode of path-by-path transcription of signals from the intermediate memory to a single track of the magnetic tape and to the visible information medium, the sections of the intermediate memory which each have their own corresponding seismic recording path are connected to the main head of the digital plotter and to the input of the single-channel playback circuit through the same commutator used for sequential switching of these signal sections.

2/2

AA0052389 *SHEKHTERMAN* Ye. I.
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
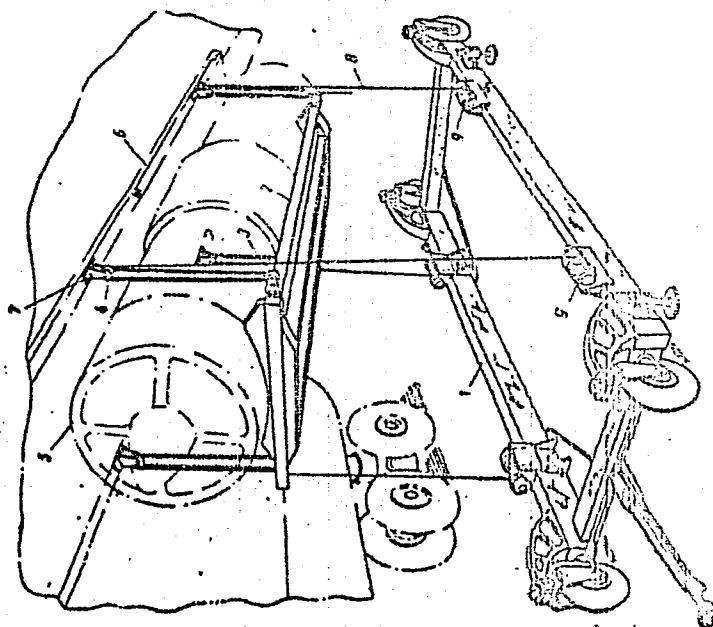Derwent, /-70

243414 LIFTING DEVICE FOR AEROPLANES consists of
truck, with loading platform 2, and is
distinguished by mounting a polypast on the loading
platform. The polypast lower block 3 is fixed to
the platform, whereas the upper one is used to fix
the aeroplane into the board. The polypast cable
are connected to the hoist 9 fixed to the truck.

17.2.68 as 1218674/40-23.M.S.BALYKIN et al.(15.9.69)
Class 62c.Int.Cl.B 64f.

Balykin, M. S.; Golubev, Yu. V.; Nikiforov, L. A.;
Chernyshev, A. S.; Shekhterman, Ye. I.

19820989

AA0052389

19820930

UNCLASSIFIED

TITLE--REPRODUCTION OF EXPERIMENTAL HEPATITIS IN DOG PUPPIES —U—

PROCESSING DATE--20NOV70

AUTHOR-(05)-KERIMZADE, K.G., ALEKPEROVA, L.I., SHEKHTMAN, A.B., KADYMOV, SH.R., BERSHCHANSKIY, M.L.

CCUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 1, PP 88-93

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEPATITIS, DOG, ADENOVIRUS, LIVER, LUNG, PANCREAS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1207

STEP NO--UR/0402/70/000/001/0088/0093

CIRC ACCESSICN NO--AP0054135

UNCLASSIFIED

CIRC ACCESSION NO--AP0054105   UNCLASSIFIED   PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADENOVIRUS TYPES 2 AND 5 AND A STRAIN OF B 61D VIRUS PRODUCED IN EXPERIMENTALLY INFECTED 4 DAY OLD DOG PUPPIES AND PUPPIES OF 1 AND ONE HALF TO 2 MONTHS AN INFECTIOUS PROCESS ACCOMPANIED BY BIOCHEMICAL CHANGES AND PATHOMORPHOLOGICAL LESIONS INDICATING INVOLVEMENT OF THE LIVER, LUNGS AND SOME OTHER ORGANS. MORPHOLOGICAL MANIFESTATIONS OF THE INFECTIOUS PROCESS WERE CHARACTERIZED BY SPECIFIC CHANGES IN EPITHELIAL AND MESENCHYMAL ELEMENTS OF THE LUNGS, LIVER, PANCREAS WITH FORMATION OF INTRANUCLEAR INCLUSIONS OF VIRAL NATURE. THE STRAIN OF B 61D VIRUS WAS FOUND TO BE MARKEDLY HEPATOTROPIC. ADENOVIRUS TYPE 5 AFFECTED THE DIGESTIVE ORGANS AND LUNGS ALMOST TO THE SIMILAR DEGREE, WHEREAS ADENOVIRUS TYPE 2 SHOWED MOST MARKED PNEUMOTROPICITY. ADENOVIRUS TYPE 1 HAD POOR BIOLOGICAL ACTIVITY. THE EXISTENCE OF CROSS SUSCEPTIBILITY OF HUMAN BEINGS AND DOGS TO ADENOVIRUSES AND HIGH RATES OF ISOLATION OF THE LATTER FROM PATIENTS WITH INFECTIOUS HEPATITIS DRAW ATTENTION TO ADENOVIRUSES AS A POSSIBLE ETIOLOGICAL FACTOR IN THIS INFECTION.

UNCLASSIFIED

USSR

POLSHKOV, M. K., MUSHIN, I. A., SHEKHTMAN, G. A., POTAPOV, O. A., All-Union Scientific Research Institute of Geophysical Methods of Prospecting

UDC: 550.834

"A Method of Processing Seismic Data"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329492, Division G, filed 25 Aug 69, published 9 Feb 72, p 183

Translation: This Author's Certificate introduces: 1. A method of processing seismic data based on the effect of the change in intensity of a seismic recording when elastic oscillations are registered in media with different acoustic rigidities. As a distinguishing feature of the patent, the procedure is designed for improved precision in locating boundaries which separate media with different acoustic rigidities. Reproduced seismic recordings obtained by some such means as vertical seismic profiling at each point of the investigated medium along the direction which intersects the boundaries to be determined are integrated over a certain time interval after conversion to quadratic form, and the integral values are presented

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USSR

POLSHKOV, M. K. et al., USSR Author's Certificate No 329492

in the form of a depth curve. The presence of geological boundaries is
then determined from changes in the curve. 2. A modification of this method
distinguished by the fact that the integral values are obtained from seismic
recordings converted to unipolar form.

2/2

AT0032087

NUCLEAR SCI. ABST.

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5363   (SLAC-Trans-103)   ACCELERATING RESONATOR
FOR THE VEPP-2 STORAGE RING.   Veshcherevich, V. G.; Kar-
liner, M. M.; Petrov, V. M.; Sadivarov, I. K.; Shekhtman, I. A.
(Akademiya Nauk SSSR, Novosibirsk. Institut Yadernoi Fiziki).
Translated by T. Watt for Stanford Linear Accelerator Center,
Calif.), from Russian Preprint No. 272.   12p.   Dep. CFSTI.

The resonator of the VEPP-2 storage ring operates in two
oscillation modes: the antiphase mode (natural frequency 75 MHz,
shunt resistance about 1 Mohm) and in the inphase mode (natural
frequency 25 MHz, effective shunt resistance about 7.5 kohm).
The operating accelerating voltage of up to 300 kV at the third-
harmonic of the rotational frequency is ensured by the first mode.
The second mode is used to recapture the particles from three
separatrices onto one. Full account is taken in the resonator
design of the required spectrum of higher natural frequencies, so
that coherent synchrotron and betatron oscillations are adequately
damped out. (auth)

1/1

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NUCLEAR SCI. ABST. 4/70   UROOOO

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5364   (SLAC-Trans-104)   HIGH-FREQUENCY POWER
SUPPLY OF THE VEPP-2 STORAGE RING.   Gornilker, S. L.;
Karliner, M. M.; Petrov, V. M.; Patukhov, V. A.; Shekhtman.
I. A. (Akademiya Nauk SSSR, Novosibirsk. Institut Yadernoi
Fiziki).   Translated by T. Watt for Stanford Linear Acceler-
ator Center, Calif., from Russian Preprint No. 285.   12p.
Dep. CFSTI.

The equipment described consists of two tuned power amplifiers,
a master oscillator, and a control system. One of the amplifiers,
operating at a wavelength of $\lambda_1 = 4$ m, has a rated power of 150 kW,
so that it can be used to develop a voltage of up to 300 kV across
the accelerating gap, which is necessary to ensure a short bunch
length. The other amplifier has a rated power of 20 kW and oper-
ates at a wavelength $\lambda_2 = 12$ m. It is used to take the stored parti-
cles from three separatrices onto one. The common master oscil-
lator and the control system ensure correct phasing of the voltages
at the two frequencies. The control units stabilize the operation of
the system, automate the operation of recapture, and contain feed-
back circuits which suppress electromechanical oscillations of the
resonator. (auth)

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USSR

SHEKHTMAN, M. I., KRASNOPEROVA, N. N., and ROGINA, V. I.

UDC 621/355.8.035.2

"Permeability and Breakdown Pressure of Ceramal Electrodes and Some Separation Materials"

V sb. Issled. v obl. khim. istochnikov toka (Research in the Field of Chemical Sources of current -- collection of works) vyp 2, Saratov, Saratov. un-t, 1971, pp 120-128 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18L178)

Translation: The authors consider data found in determining the aero- and hydrodynamic permeability as well as the breakdown pressure of electrodes and separation materials used in hermetic sealing of alkaline energizers. The aerodynamic permeability of electrodes is of the order of 10^{-5} cm^2; in cobalt electrodes permeability is the same along and across the electrode, while for nickel-oxide electrodes the longitudinal permeability is approximately 3 times the transverse value. The hydrodynamic permeability of electrodes is of the order of 10^{-11} cm^2, the value being approximately 4 times lower than the aerodynamic permeability in cadmium electrodes. Increasing the degree of dispersion of the filler increases the breakdown pressure, reduces the maximum pore radius and increases the average pore radius. Data are also obtained for FPP, propylene fiber, capron, miplast, cellophane and other separation materials. V. S. Levinson 1/1

- 19 -

TITLE--STEREOCHEMICAL STUDIES. VI. CONFORMATIONS OF 2-SUBSTITUTED
    TETRAHYDROPYRANS STUDIED BY AN NMR METHOD -U-

UNCLASSIFIED

AUTHOR-(02)-ZEFIROV, N.S., SHEKHTMAN, N.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 863-5

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, HETEROCICLIC OXYGEN COMPOUND, NMR SPECTRUM,
    MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2085

CIRC ACCESSION NO--AP0125672

PROCESSING DATE--30OCT70

STEP NO--UR/0366/70/006/004/0863/0865

UNCLASSIFIED

CIRC ACCESSION NO--AP0125672   UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE NMR SPECTROSCOPIC EVIDENCE IS
PRESENTED IN SUPPORT OF THE PREDOMINANTLY AXIAL CONFORMATION (OF X) IN
2,(X,SUBSTITUTED),TETRAHYDROPYRANS (I) (X EQUALS N SUB3, ACO, OR
TERT,BUOO) AND OF THE EQUATORIAL CONFORMATION OF X IN I (X EQUALS NHAC).
THE AXIAL CONFORMATION IS BROUGHT ABOUT BY THE REPULSION BETWEEN O AND
X IN I (ANOMERIC EFFECT).   FACILITY: MOSK. GOS. UNIV. IM.
LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

TITLE--CHEMISTRY OF UNSATURATED ETHERS. XXX. DIENE CONDENSATION OF
1,ALKOXY,1,3,DIENES WITH CARBONYL COMPOUNDS. CONFIGURATIONS AND
UNCLASSIFIED

AUTHOR-(05)-YABLONOVSKAYA, S.D., SHEKHTMAN, N.M., ANTONOVA, N.D.,
BOGATKOV, S.V., MAKIN, S.M.
PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 871-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIENE, CARBONYL COMPOUND, HETEROCYCLIC OXYGEN COMPOUND,
CATALYTIC HYDROGENATION, ISOMER, GAS CHROMATOGRAPHY, NMR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2087

CIRC ACCESSION NO--AP0125674

STEP NO--UR/0366/70/006/004/0871/0877

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO—AP0125674   PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF ROCH:CHCH:CH
SUB2 (R IS ME OR ET) WITH OHCCO SUB2 R PRIME1 (R PRIME1 IS ME, ET, OR
BU) GAVE 2,RC,6,RO SUB2 C,DISUBSTITUTED,DELTA PRIME3,DIHYDROPYRANS (I).
HYDROGENATION OF I OVER PTO SUB2 CATALYST GAVE THE TETRAHYDRO ANALOGS
(II).   I AND II ISOMERS ARE SEPD. BY GAS CHROMATOG.; NMR SPECTRA ARE
DISCUSSED, THE TRANS ISOMERS, CCNTG. AXIAL RO GROUPS, HAVE SHORTER
RETENTICN TIMES THAN THE CIS ISOMERS (DIEQUATORIAL CONFORMATION). THE
THEORETICAL CALCNS. OF THE STABILITY OF THESE ISOMERS CONFIRM THE NMR
DATA.   FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM.
LOMCNOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2   011

TITLE--TANTALUM MONONITRIDE PREPARATION -U-   UNCLASSIFIED

PROCESSING DATE--27NOV70

AUTHOR-(05)-MERZHANOV, A.G., BUTAKOV, A.A., SHEKHTMAN, V.SH.,
BOROVINSKAYA, I.P., RABINKIN, A.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,365

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TANTALUM COMPOUND, CHEMICAL PATENT, NITRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1444

CIRC ACCESSION NO--AA0126975

STEP NO--UR/0482/70/000/000/0000/0000

UNCLASSIFIED

2/2   011
CIRC ACCESSION NO--AA0126975
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. CUBICALLY MODIFIED TA MONONITRIDE
IS PREPD. BY HEATING TA IN N.   FACILITY: FILIAL INSTITUTA
KHIMICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70

1/2   026
TITLE--RESOLUTION OF A THREE DIMENSIONAL HOLOGRAM AS AN OPTICAL IMAGING
  SYSTEM -U-
AUTHOR-(04)-ARISTOV, V.V., LYSENKO, V.G., TIMOFEYEV, V.B., SHEKHTMAN,
  V.SH.
COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 1, 1970, P. 795-798

DATE PUBLISHED--01APR70

SUBJECT AREAS--PHYSICS, METHODS AND EQUIPMENT

TOPIC TAGS--HOLOGRAM, ELECTROMAGNETIC WAVE DIFFRACTION, OPTIC IMAGE,
  PHOTOSENSITIVITY, MAGNETIC RECORDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1800   STEP NO--UR/0020/70/191/000/0795/0798

CIRC ACCESSION NO--AT0125412
                    UNCLASSIFIED

UNCLASSIFIED

2/2   026
CIRC ACCESSION NO--AT0125412
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE PROCESS OF
RECORDING ON A THREE DIMENSIONAL PHOTOSENSITIVE ELEMENT THE WAVE FIELD
FROM AN OBJECT LOCATED IN THE FAR FIELD. IT IS SHOWN THAT DURING THE
"READING" OF A THREE DIMENSIONAL HOLOGRAM THE RESOLUTION IN THE IMAGE OF
THE OBJECT POINTS IS DETERMINED BY BOTH THE TRANSVERSE DIMENSIONS AND
THE THICKNESS OF THE PHOTOSENSITIVE LAYER. THE PROCESS OF
RECONSTRUCTION OF THE IMAGE OF AN OBJECT POINT IS REDUCED TO THE
DIFFRACTION OF THE "READING" WAVE, WHICH OCNVERGES AT A CERTAIN POINT ON
THE CORRESPONDING HARMONIC BLACKENING DISTRIBUTION. ACORDINGLY, THE
INTENSITY DISTRIBUTION IN THE IMAGE OF AN OBJECT POINT CAB BE CALUCLATED
ON THE BASIS OF THE THEORY OF ELECTROMAGNETIC WAVE DIFFRACTION BY THREE
DIMENSIONAL PERIODIC STRUCTURES. FACILITY: AKADEMIIA NAUK SSSR,
INSTITUT FIZIKI TVERDOGO TELA, CHERNOGOLOVKA, USSR.

UNCLASSIFIED

TITLE--UMWEGANREGUNG IN HOLOGRAPHY -U-

AUTHOR-(04)-ARISTOV, V.V., LYSENKO, V.G., SHEKHTMAN, V.SH., TIMOFEEV, V.B.

COUNTRY OF INFO--USSR

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CIRC ACCESSION NO--AP0111695
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPERIMENTAL SCHEME HAS BEEN CONSTRUCTED FOR PRODUCING THE RENNINGER EFFECT IN THE OPTICAL RANGE. COLORED KCL CRYSTALS HAVE BEEN USED AS PHOTOSENSITIVE ELEMENTS. THE UMWEGANREGUNG WAVE HAS BEEN REGISTERED IN THIS EXPERIMENT.
FACILITY: ACAD. SCI. USSR, CHERNOGOLOVKA.

TITLE--THE AGING TRAITS OF CEREBRAL STROKES -U-

AUTHOR-(G3)-DRACHEVA, Z.N., PENEK, N.V., SHEHURINOK, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
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DATE PUBLISHED--------70

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TOPIC TAGS--CEREBRUM, HEMORRHAGE, BIOLOGIC AGING, DIAGNOSTIC MEDICINE

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PROXY REEL/FRAME--3001/0921   STEP NO--UR/0246/70/070/006/0812/0815

CIRC ACCESSION NO--AP0126580
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CIRC ACCESSION NO--AP0126580
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CONCERNS A COMPARATIVE
  STUDY OF CLINICAL TRAITS IN HEMORRHAGIC STROKES OF THE YOUNG AND OLD
  AGE. THE AUTHORS STUDIED 17 PATIENTS IN THE AGE GROUP OF 30-45 AND 25
  PATIENTS FROM 60-75 YEARS OF AGE WITH CEREBRAL HEMORRHAGES. IN ALL THE
  CASES THE DIAGNOSIS WAS VERIFIED IN POST MORTEM EXAMINATIONS. THE
  PATIENTS OF THE YOUNGER GROUP WERE CHARACTERIZED BY MORE EXPRESSED
  GENERAL BRAIN SYMPTOMS, A RAPID DEVELOPMENT OF COMATOSE STATES,
  AUTOMATIZED JESTURES, HORMETONIA, OCULOMOTOR DISORDERS, DISTURBANCES OF
  RESPIRATION AND CARDIAC ACTIVITY. THE OLDER PATIENTS DID NOT EXPRESS SU
  STRIKINGLY THE GENERAL BRAIN SYMPTOMS, WHICH DEVELOPED MORE GRADUALLY.
  THIS MAY BE RELATED TO A MORE COMPENSATED BRAIN EDEMA, SWELLING, BECAUSE
  OF THE CEREBRAL AND BRAIN TISSUE ATROPHY, AS WELL AS A DECREASE OF THE
  REACTIVITY ON BEHALF OF THE NERVOUS SYSTEM.   FACILITY:
  KIYEVSKOGO MEDITSINSKOGO INSTITUTA.   FACILITY: KAFEDRA NERVNYKH
  BOLEZNEY.

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TITLE--A NEW BATHYTHERMOSOUNDER -U-

AUTHOR-(02)-SHEKHVATOV, B.V., SUVILOV, E.V.

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